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a second error correction code (ECC) encoder operable to encode the interleaved data stream to produce a second encoded data stream;

a modulator operable to assign each of the first data stream and the second encoded data stream to a respective constellation in a vector space diagram to produce modulated signals wherein the number of signal points of the constellation for the first data stream is different from the number of signal points of the constellation for the second encoded data stream;

an Inverse Fast Fourier Transformer (IFFT) operable to convert the modulated signals into an IFFT converted signal, having an effective symbol part and a guard interval, according to Orthogonal Frequency Division Multiplexing; and

a transmitter operable to transmit the IFFT converted signal,

wherein the first data stream has data for demodulation including the number of signal points of the constellation for the second encoded data stream, and

the guard interval is selected to have a predetermined time period.

12. A signal receiving apparatus comprising:

a Fast Fourier Transformer (FFT) operable to convert a received signal, having an effective symbol part and a guard interval, into a FFT converted signal according to Orthogonal Frequency Division Multiplexing, the guard interval being selected to have a predetermined time period,

the received signal having information of a first data stream and an encoded data stream, wherein each of the first data stream and the encoded data stream are assigned to a respective constellation in a vector space diagram, and the number of signal points of the constellation for the

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first data stream is different from the number of signal points of the constellation for the encoded data stream, and

the first data stream having data for demodulation including the number of signal points of the constellation for the encoded data stream;

a demodulator operable to demodulate the FFT converted signal to produce the first data stream and the encoded data stream, wherein the encoded data stream is produced according to the data for demodulation;

a first error correction code (ECC) decoder operable to decode the encoded data stream to produce a first decoded data stream;

a de-interleaver operable to de-interleave the first decoded data stream to produce a de-interleaved data stream; and

a second error correction code (ECC) decoder operable to decode the de-interleaved data stream to produce a second decoded data stream.

13. A signal transmission system for transmitting and receiving a first data stream and a second data stream, the system comprising a signal transmission apparatus and a signal receiving apparatus,

said signal transmission apparatus comprising:

a first error correction code (ECC) encoder operable to encode the second data stream to produce a first encoded data stream;

an interleaver operable to interleave the first encoded data stream to produce an interleaved data stream;

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a second error correction code (ECC) encoder operable to encode the interleaved data stream to produce a second encoded data stream;

a modulator operable to assign each of the first data stream and the second encoded data stream to a respective constellation in a vector space diagram to produce modulated signals wherein the number of signal points of the constellation for the first data stream is different from the number of signal points of the constellation for the second encoded data stream;

an Inverse Fast Fourier Transformer (IFFT) operable to convert the modulated signals into an IFFT converted signal, having an effective symbol part and a guard interval, according to Orthogonal Frequency Division Multiplexing;
and

a transmitter operable to transmit the IFFT converted signal, and said signal receiving apparatus comprising:

a Fast Fourier Transformer (FFT) operable to convert the IFFT converted signal into a FFT converted signal according to Orthogonal Frequency Division Multiplexing;

a demodulator operable to demodulate the FFT converted signal to produce the first data stream and the second encoded data stream, wherein the second encoded data stream is produced according to the data for demodulation;

a first error correction code (ECC) decoder operable to decode the second encoded data stream to produce the interleaved data stream;

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a de-interleaver operable to de-interleave the interleaved data stream to produce the first encoded data stream; and

a second error correction code (ECC) decoder operable to decode the first encoded data stream to produce the second data stream,

wherein the first data stream has data for demodulation including the number of signal points of the constellation for the second encoded data stream,
and

the guard interval is selected to have a predetermined time period.

14. A signal transmission method for transmitting a first and a second data stream, comprising:
first error correction code (ECC) encoding the second data stream to produce a first encoded data stream;
interleaving the first encoded data stream to produce an interleaved data stream;
second error correction code (ECC) encoding the interleaved data stream to produce a second encoded data stream;
assigning each of the first data stream and the second encoded data stream to a respective constellation in a vector space diagram to produce modulated signals wherein the number of signal points of the constellation for the first data stream is different from the number of signal points of the constellation for the second encoded data stream;

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converting the modulated signals into an IFFT (Inverse Fast Fourier Transform) converted signal having an effective symbol part and a guard interval, according to Orthogonal Frequency Division Multiplexing, and

transmitting the IFFT converted signal,

wherein the first data stream has data for demodulation including the number of signal points of the constellation for the second encoded data stream, and
the guard interval is selected to have a predetermined time period.

15. A signal receiving method comprising:

converting a received signal having an effective symbol part and a guard interval, into a FFT (Fast Fourier Transform) converted signal according to Orthogonal Frequency Division Multiplexing, the guard interval being selected to have a predetermined time period,

the received signal having information of a first data stream and an encoded data stream, wherein each of the first data stream and the encoded data stream are assigned to a respective constellation in a vector space diagram, and the number of signal points of the constellation for the first data stream is different from the number of signal points of the constellation for the encoded data stream, and

the first data stream having data for demodulation including the number of signal points of the constellation for the encoded data stream;

demodulating the FFT converted signal to produce the first data stream and the encoded data stream, wherein the encoded data stream is produced according to the data for demodulation;

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first error correction code (ECC) decoding the encoded data stream to produce a first decoded data stream;

de-interleaving the first decoded data stream to produce a de-interleaved data stream; and
second error correction code (ECC) decoding the de-interleaved data stream to produce a second decoded data stream.

16. A signal transmitting and receiving method for transmitting and receiving a first data stream and a second data stream, the method comprising a signal transmission method and a signal receiving method,

said signal transmission method comprising:

first error correction code (ECC) encoding the second data stream to produce a first encoded data stream;

interleaving the first encoded data stream to produce an interleaved data stream;

second error correction code (ECC) encoding the interleaved data stream to produce a second encoded data stream;

assigning each of the first data stream and the second encoded data stream to a respective constellation in a vector space diagram to produce modulated signals wherein the number of signal points of the constellation for the first data stream is different from the number of signal points of the constellation for the second encoded data stream;

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converting the modulated signals into an IFFT (Inverse Fast Fourier Transform) converted signal, having an effective symbol part and a guard interval, according to Orthogonal Frequency Division Multiplexing; and
transmitting the IFFT converted signal, and
said signal receiving method comprising:

converting the IFFT converted signal into a FFT (Fast Fourier Transform) converted signal according to Orthogonal Frequency Division Multiplexing;

demodulating the FFT converted signal to produce the first data stream and the second encoded data stream, wherein the second encoded data stream is produced according to the data for demodulation;

first error correction code (ECC) decoding the second encoded data stream to produce the interleaved data stream;

de-interleaving the interleaved data stream to produce the first encoded data stream; and

second error correction code (ECC) decoding the first encoded data stream to produce the second data stream,

wherein the first data stream has data for demodulation including the number of signal points of the constellation for the second encoded data stream,
and

the guard interval is selected to have a predetermined time period.